



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,431	02/29/2008	Morio Onoc	64719(51379)	6303
21874	7590	10/08/2009	EXAMINER	
EDWARDS ANGELI, PALMER & DODGE LLP			DOUGHERTY, THOMAS M	
P.O. BOX 55874			ART UNIT	PAPER NUMBER
BOSTON, MA 02205			2837	
MAIL DATE		DELIVERY MODE		
10/08/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,431	<b>Applicant(s)</b> ONO ET AL.
	<b>Examiner</b> Thomas M. Dougherty	<b>Art Unit</b> 2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 04 January 2006.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-5 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-5 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 04 January 2006 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-166a)  
Paper No(s)/Mail Date *See Continuation Sheet*

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :2/4/09, 9/25/08, 8/7/08(2 of this date), 2/16/06.

### **DETAILED ACTION**

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Koyama (JP 5-243890). Koyama shows (fig. 1) an SC cut crystal resonator, wherein a surface of a quartz crystal orthogonal to a Y axis thereof is rotated through 33° to 35° about an X axis (see CONSTITUTION), and is then rotated from this rotated position through 22° to 24° about a Z axis (see CONSTITUTION), and a slender quartz crystal blank (11) oblong (note that cut is similar to Applicant's) in an X' axis direction is cut from the rotated surface, and an end surface of said quartz crystal blank orthogonal to a Z' axis, has a tilt angle tilted in a direction rotated through a predetermined angle about the X' axis.

#### ***Claim Rejections - 35 USC § 103***

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama (JP 5-243890) in view or routine skill in the art. Given the invention of Koyama as noted above he does not state that his tilt angle is between +7° and +13°, -7° and -13°, -9° and -11°, or, +9° and +11°.

It would have been obvious to one having ordinary skill in the art to employ the claimed angles in the device of Koyama at the time of his invention since he does not

note any limitation on the cut angle and because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining prior art cited reads on some aspects of the claimed invention.

Direct inquiry to Examiner Dougherty at (571) 272-2022.

/T. M. D./

tmd

/Thomas M. Dougherty/

Primary Examiner, Art Unit 2834

April 13, 2009